

WHAT IS CLAIMED IS:

1. An optical reproduction apparatus for reproducing information from an optical recording medium in which a super-resolution film is deposited on a recording layer having the information recorded therein, the optical reproduction apparatus comprising:

an irradiation optical system for condensing a laser light and irradiating the super-resolution film with the light, the laser light having a light intensity distribution the center portion of which is lower than that of its peripheral portion; and

a reproduction optical system for separating a center portion and a peripheral portion of a reflected light reflected from the optical recording medium by irradiating the medium with the laser light, and reproducing the information from the center portion of the reflected light.

2. An optical reproduction apparatus according to claim 1, wherein the irradiation optical system includes an optical element provided in a light path of the irradiation optical system and forming the light intensity distribution.

3. An optical reproduction apparatus according to claim 1, wherein

the irradiation optical system includes:

a laser light source for emitting the laser light; and

an optical filter provided in a light path between the laser light source and the optical recording medium, transparency of a center portion of the optical filter being lower than that of its peripheral portion thereof.

4. An optical reproduction apparatus according to claim 1, wherein

the irradiation optical system includes:

a laser light source for emitting the laser light; and

an optical filter provided at an output surface of the laser light source,

transparency of a center portion of the optical filter being lower than that of its peripheral portion thereof.

5. An optical reproduction apparatus according to claim 1, wherein the irradiation optical system includes a semiconductor laser for emitting a laser light having the light intensity distribution due to a TEM mode.

6. An optical reproduction apparatus according to claim 1, wherein the reproduction optical system includes an optical filter provided in a light path of the reproduction optical system, transparency of a center portion of the optical filter being higher than that of its peripheral portion thereof.

7. An optical reproduction apparatus according to claim 1, wherein the reproduction optical system includes a reflecting optical element including a reflecting member which has an outer shape smaller than the reflected light, reflects the center portion of the reflected light toward a direction different from an incident direction of the reflected light and allows the peripheral portion of the reflected light to pass through.

8. An optical reproduction apparatus according to claim 1, wherein the irradiation optical system and the reproduction optical system include a common optical element which is provided in a common optical path of the irradiation optical system and the reproduction optical system, form the light intensity distribution of the irradiation laser light, and reflect the center portion of the reflected light toward a direction different from an incident direction.

9. An optical reproduction apparatus according to claim 1, wherein
the irradiation optical system includes:
an optical element provided in an optical path of the irradiation optical system
and forming the light intensity distribution; and

a simple reflecting film at a center portion of a section of a common optical path of the irradiation optical system and the reproduction optical system, and a polarization beam splitter at a peripheral portion of the center portion of the section, the polarized beam splitter reflecting or transmitting according to polarization of the reflected light.

10. An optical reproduction apparatus according to claim 1, wherein the reproduction optical system includes an error signal generation unit which generates an automatic focusing error signal or a tracking error signal from the center portion of the reflected light.

11. An optical reproduction apparatus according to claim 1, wherein the reproduction optical system includes an error signal generation unit which generates an automatic focusing error signal or a tracking error signal from the peripheral portion of the reflected light.

12. An optical reproduction apparatus according to claim 1, wherein the super-resolution film is an aperture type, and the reproduction optical system separates a peripheral portion of a reflected light reflected from the aperture type super-resolution film.

13. An optical reproduction apparatus according to claim 1, wherein the super-resolution film is a scattering type, and the reproduction optical system separates a peripheral portion of a reflected light reflected from the recording film.

14. An optical reproduction apparatus for reproducing information from an optical recording medium in which a super-resolution film is deposited on a recording layer having the information recorded therein, the optical reproduction apparatus comprising:

an irradiation optical system for condensing a laser light and irradiating the super-resolution film with the light from oblique direction to the super-resolution film; and

a reproduction optical system for separating a center portion and a peripheral portion of a reflected light reflected from the optical recording medium by irradiating the medium with the laser light and reproducing the information from the center portion of the reflected light.

15. An optical reproduction apparatus for reproducing information from an optical recording medium, comprising:

an irradiation optical system for condensing a laser light and irradiating the optical recording medium with the light, the laser light having a light intensity distribution the center portion of which is lower than that of its peripheral portion; and

a reproduction optical system for separating a center portion and a peripheral portion of a reflected light reflected from the optical recording medium by irradiating the medium with the laser light and reproducing the information from the center portion of the reflected light.

16. An optical recording and reproduction apparatus for performing recording and reproduction of information to an optical recording medium in which a super-resolution film is deposited on a recording layer, the optical recording and reproduction apparatus comprising:

an irradiation optical system for condensing a laser light and irradiating the super-resolution film with the light, the laser light having a light intensity distribution the center portion of which is lower than that of its peripheral portion;

a reproduction optical system for separating a center portion and a peripheral portion of a reflected light reflected from the optical recording medium by irradiating

the medium with the laser light and reproducing the information from the center portion of the reflected light; and

a modulation unit for modulating the laser light passing through an optical path of the irradiation optical system in accordance with the information.